

10 user;  
retrieving a document in the document database to produce a retrieval result;  
and  
generating [one or more] a plurality of views using [a] the retrieval result [from  
said retrieval engine means] and the index, switching the [one or more] views, and displaying  
15 the views on a display device.

### **REMARKS**

In the Office Action dated February 2, 2000, the Examiner noted that claims 1-31 were pending in the application; required changes to the title; and rejected claims 1-18 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patents 5,943,669 Numata, 5,940,831 Takano and 5,835,922 to Shima et al. (References A, B and L, respectively). Claims 1-31 remain in the case. The Examiner's rejections are traversed below.

#### **The Invention**

The present is directed an apparatus and method for displaying a group of documents containing cross-referenced message documents sequentially accumulated through electronic conferences, such as a forum or message board established through a computer network, as described on page 1, lines 12-16, of the application. The drawbacks of conventional techniques for displaying such documents which are enumerated on pages 2 and 3 of the application are overcome by classifying the documents into groups, extracting a keyword or other attribute identifying each of the groups and producing a display of the keywords or documents. One way of classifying the documents is by topic with the keyword for a group extracted from the topic. In one embodiment of the invention, the cross-references are displayed in a tree structure with the document attribute information for each group. The documents that are displayed may be limited to the results from a query of a database containing the documents.

## The Prior Art

### U.S. Patent 5, 943,69 to Numata

The Numata patent is directed to a document retrieval system for documents that have a defined structure, such as chapters, sections and paragraphs, with keywords in headings for each structural element. To search the documents, "fundamental vectors" are generated based on keywords for each classification unit. Fundamental vectors are combined with heading vectors generated based on the keywords extracted from each heading, to form composite vectors. The composite vectors are used to determine degree of similarity. Documents are retrieved based on their degree of similarity to a query. Conventional techniques are used to extract keywords and are not described in Numata (see column 23, lines 31-32). Various techniques are described for weighting the "degree of dispersion and appearance frequency" (column 29, line 8) of words and the degree of similarity, see e.g., column 27, lines 4-15. The weights are assigned to elements in a vector format, like that illustrated in Fig. 6, so that a composite vector, e.g.,  $V_{p2}$ , can be generated by adding the elements (see column 7, line 53 to column 10, line 36 with references to Figs. 4-6).

### U.S. Patent 5,940,831 to Takano

The Takano patent is directed to a hypermedia system for managing directories and directory data originating from a node link structure in a directory server. As illustrated in Figs. 1-3, a directory server 12 contains table 20 with directory information, such as node identifier, host, file name and document title; table 30 with secondary information, such as category ID, category and node list; and retrieval unit 123 to access the tables 20 and 30. The table in secondary information storage 122 may also include related categories as illustrated in Fig. 5. When a user requests information related to a category, retrieval unit 123 accesses tables 20 and 30 and a display like that illustrated in Fig. 4 can be generated. The secondary information is generated as illustrated in Fig. 9 and described at column 7, lines 7-30.

### U.S. Patent 5,835,922 to Shima et al.

The Shima et al. patent is directed to a document processing system for inputting requirements of a reader or writer and processing the documents according to the requirements. As noted in the Background of the Invention section, words in a document are

conventionally displayed in the same sequence that they were created by the author. The system disclosed in Shima et al. enables documents to be reconstructed in different orders for different users. For example, documents are reconstructed for executives to present a summary. In addition, the system allows users to select desired portions of a document.

#### New Title

In item 5 on page 2 of the Office Action, a more descriptive title was required. The title has been amended as suggested by the Examiner.

#### Rejection under 35 U.S.C. § 103(a)

In item 7 on pages 3-8 of the Office Action, claims 1-18 were rejected under 35 U.S.C. § 103(a) as unpatentable over Numata in view of Takano. With respect to claim 1, it was noted that Numata discloses classifying documents based on degree of similarity among composite vectors, extracting keywords from documents and displaying selected elements from categories. Furthermore, it was noted that Numata does not disclose classifying documents into groups and that Takano discloses that the location of files are uniquely determined by an identifier such as a uniform resource locator (URL). It was also noted that Numata does not teach displaying a title relevant to a group of documents, but it was asserted that the selection and displaying of an element as disclosed by Numata would make this obvious.

No explanation was provided in the Office Action regarding what in Numata would correspond to cross-references in documents. As used in the application, "cross-referenced message documents" (e.g., claim 1, line 2) are "sequentially accumulated documents" (application, page 1, line 16) generated through "electronic conferences, electronic news, etc." (application, page 1, line 12). The preamble of the independent claims, including claim 1, have been amended to provide a definition of the documents as "contributed to at least one of a forum and a message board established through a computer network" (e.g., claim 1, lines 2-4) which is consistent with the description of the documents in the specification. As amended, it should now be clear that the cross-references in the documents are part of the input to an

apparatus or method according to the present invention, not something produced by the present invention, as suggested by the citation of Numata.

Starting with documents that contain cross-references, the apparatus recited in claim 1 comprises a document group analysis device that analyzes the cross- reference(s) between the documents to form one or more groups and extracts document group information. As noted above, the Examiner acknowledged that Numata does not disclose the operations performed by the document group analysis device. It is submitted that Takano does not overcome this deficiency. The method described in Takano for generating the secondary information table at column 7, lines 7-30 with reference to Fig. 9 does not contain any suggestion of searching for cross-references, but merely generating a table with domain names, such as "AAA.co.jp." no explanation was provided why one of ordinary skill in the art would find it obvious to apply the technique disclosed in Takano to analyzing cross-references and extracting information about classification as document group information.

In the first paragraph on page 4 of the Office Action, it was asserted that it would be obvious to one of ordinary skill in the art "to display a title relevant to each group of documents and a corresponding keyword" (claim 1, lines 13-14) from the disclosure in Numata of "selecting an 'element'" (Office Action, page 4, line 6). As discussed above, the "elements" in Numata are portions of a single document, such as paragraphs, chapters, sections, etc. It is submitted that the display of such portions of a single document does not contain any suggestion of displaying "a title relevant to each group of documents" (claim 1, lines 13-14). For the above reasons, it is submitted that claim 1 and claim 2 which depends therefrom patentably distinguish over Numata in view of the Takano.

The rejection of claim 3 set forth on pages 4-6 of the Office Action is very similar to the rejection of claim 1. The only differences that have been found are the first full paragraph on page 5 and the first four lines of the following paragraph. The limitations used to recite the document group analysis device are the same in claims 1 and 3. Therefore, the arguments set forth above regarding this device as recited in claim 1 applies to claim 3. In addition, claim 3 recites a document group structured display device which displays "cross-references in each group of documents in a tree structure" (claim 3, lines 13-14). Nothing was cited or found in

either Numata or Takano of displaying either cross-references or anything in a tree structure. The statement that "Takano discloses '.....a technology to make the process of navigation more effective by recognizing the content of the content files and the status of their relations in such a way directory servers can manage node data .....'" which is repeatedly made in the Office Action, does not contain any suggestion or incentive to one of ordinary skill in the art to generate a display of cross-references or to use a tree structure to display information regarding documents. For the above reasons, it is submitted that claim 3 and claims 4-7 which depend therefrom patentably distinguish over Numata and Takano.

Furthermore, claims 4-7 recite additional details regarding the display produced by the group structure display device. Since no such device is taught or suggested by either Numata or Takano, claims 4-7 recite additional details further distinguishing over the combination of Numata and Takano.

The rejection of claim 8 was set forth on pages 7-8 of the Office Action. The first paragraph directed to claim 8 is essentially the same as the first paragraph of the rejection of claims 1 and 3. Since the preamble of claim 8 defines the documents in the same way as the preambles of claims 1 and 3 and the document group analysis device is recited the same in claims 1, 3 and 8, it is submitted that claim 8 patentably distinguishes over Numata in view of Takano for the same reasons as discussed above with respect to claims 1 and 3.

Furthermore, the apparatus recited in claim 8 also includes topic analysis, topic keyword extraction and topic keyword display devices. There is no suggestion in either Numata or Takano of extracting and displaying topic keywords from documents that have been grouped in the manner recited in claim 8. For the above reasons, it is submitted that claim 8 patentably distinguishes over the combination of Numata and Takano.

As noted at the bottom of page 8 of the Office Action, claims 9-18 contain method (and computer-readable storage medium) claims that correspond to the apparatus claims 1-8. Therefore, it is submitted that claims 9-18 patentably distinguish over the combination of Numata and Takano for the reasons set forth above with respect to claims 1-8.

In item 8 on pages 9-11, claims 19 and 28-31 were rejected under 35 U.S.C. § 103(a) as unpatentable over Numata in view of Shima et al. The Office Action acknowledged that

Numata does not teach or suggest the contents estimation device recited in claim 19 and it was asserted that Shima et al. discloses performing the operations of the contents estimation device at column 1, lines 53-65. However, this portion of Shima et al. merely describes that documents are normally displayed in the order defined by their authors. Claim 19 recites that the contents estimation device estimates "contents of the group of documents based on contents of a document and patterns of opinion input by authors from a document database storing a group of cross-referenced documents" (claim 19, lines 4-6) and generates "an index corresponding to a topic pattern of the estimated contents" (claim 19, line 7). There is nothing in the cited portion of Shima et al. suggesting either and no suggestion in either of the references of generating an index in the manner that the contents estimation device generates an index.

Furthermore, claim 19 recites generating "views using a retrieval result from said retrieval engine device and the index" (claim 19, lines 13-14). Since there is no index like that recited in claim 19, Numata does not teach or suggest generating views in this way. For the above reasons, it is submitted that claim 19 and claims 28 and 29 which depend therefrom patentably distinguish over Numata in view of Shima et al.

Claims 30 and 31 are method and computer-readable storage medium claims, respectively, corresponding to the apparatus recited in claim 19. Therefore, it is submitted that claims 30 and 31 patentably distinguish over Numata in view of Shima et al. for the reasons discussed above with respect to claim 19.

In item 9 on pages 11-15 of the Office Action, claims 20-27 were rejected as unpatentable over Numata in view of Shima et al. and further in view of Takano. Since claims 20-27 depend from claim 19, it is submitted that claims 20-27 patentably distinguish over Numata in view of Shima et al. for the reasons set forth above with respect to claim 19. Furthermore, it is submitted that the addition of Takano does not overcome the deficiencies of Numata and Shima et al. discussed above. Therefore, claims 20-27 patentably distinguish over Numata in view of Shima et al. and Takano for the same reasons.

Furthermore, as discussed above with respect to claim 3, Takano does not teach or suggest a tree structure display, nor does it teach or suggest the specific types of displays

recited in claims 20-27. Therefore, it is submitted that claims 20-27 further patentably distinguish over Numata in view of Shima et al. and Takano due to the additional details recited therein.

Summary

It is submitted that the references cited by the Examiner, taken individually or in combination, do not teach or suggest the features of the present claimed invention. Thus, it is submitted that claims 1-31 are in a condition suitable for allowance. Reconsideration of the claims and an early Notice of Allowance are earnestly solicited.

If any further fees are required in connection with the filing of this Amendment, please charge same to our Deposit Account No. 19-3935.

Respectfully submitted,

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